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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,939

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EXAMINER

ALSTRUM ACEVEDO, JAMES HENRY

ART UNIT

PAPER NUMBER

1616

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/686,939	<b>Applicant(s)</b> MCGRATH ET AL.	
	<b>Examiner</b> JAMES H. ALSTRUM ACEVEDO	<b>Art Unit</b> 1616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, 16, 19, 22-24, 52-59, 62, and 68-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 75-82 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12, 14, 16, 22-24, 52-62 and 68-74 is/are rejected.
- 7) ☒ Claim(s) 19 and 65 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

**Claims 1-12, 14, 16, 19, 22-24, 52-59, 62, and 68-82 are pending.** Applicants have amended claims 1, 19, 52, 62, 65, and 69. Applicants previously cancelled claims 13, 25-51, and 60. Applicants have newly cancelled claims 15, 17-18, and 20-21. Claims 75-82 are new. Applicants are advised that a different Examiner is examining the instant application. All rejections not explicitly maintained in the instant office action have been withdrawn per Applicants' claim amendments and/or persuasive arguments.

### ***Terminal Disclaimer(s)***

The terminal disclaimers filed on June 1, 2007 and April 7, 2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of copending application Nos. 10/686,938 and 10/686,937, respectively, have been reviewed and are accepted. The terminal disclaimers have been recorded.

### ***Specification***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-3, 5-12, 14, 16, 22-24, 52-62, 68-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yim (U.S. Patent 5,486,356) (of record) in view of Schiestel et al. (U.S. Patent No. 6,830,694) (of record), Carlucci (WO 99/30752), and Harada et al. (U.S. Patent No. 6,410,616).**

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*Applicant Claims*

Applicants claim (1) a method of reducing odor comprising (a) modifying particles (e.g. silica, PS, alumina, etc.) having a positive zeta potential with a transition metal, wherein a bifunctional chelating agent complexes said transition metal to said particles and contains one or more iminodiacetic acid groups and (b) contacting said modified particles with an odorous compound; and (2) a substrate for reducing odor coated with modified particles as described in (1).

*Determination of the Scope and Content of the Prior Art (MPEP §2141.01)*

Yim teaches a deodorant composition comprising a transition metal oxide or alloy with a catalytic metal on carrier (col. 1, lines 65-67). Column 2, lines 16-20 disclose the carrier comprising silica and magnesium oxide. Column 2, lines 21-23 teach the transition metals selected from the group consisting of chromium, manganese, titanium, vanadium, zinc, etc. Column 3, lines 16-18 teach that the deodorant composition easily absorbs offensive-smelling materials such as ammonia, amine, methyl-mercaptan, carbon disulfides and the like.

Schiestel et al. teach in column 2, lines 13-21 that particles coated with functional groups, e.g. amines, amino groups or carboxylate groups are good complexing agents for transition metals and that coating with these functional groups prevents irreversible aggregation.

Carlucci teaches odor control particles and identifies zeolites, silica, carbon, chelants (e.g. EDTA), cyclodextrin, etc. as being well-known odor-controlling materials (pg. 4, last paragraph on page; and claim 2 on page 21). Carlucci teaches the odor control particles find

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utility in absorbent articles (i.e. substrates), such as sanitary napkins, diapers, incontinence pads, and perspiration pads (abstract).

Harada et al. teach **an absorbant articles comprising woven and non-woven fabrics** (col. 9, lines 25-64), **which can include deodorants** (col. 10, lines 19) comprising an inorganic particles having an affinity for water different from the high molecular compound. The inorganic particles are described in column 5, lines 13-22, and can be, hydrophobic alumina or hydrophilic particles, such as, alumina oxide. It is also taught in column 5, lines 29-31 that a **particle size of less than 100 nm is preferable.**

*Ascertainment of the Difference Between Scope the Prior Art and the Claims  
(MPEP §2141.012)*

Yim lacks the teaching of complexing a transition metal to a carrier via a bifunctional chelating agent having an iminodiacetic acid moiety. This deficiency is cured by the teachings of Schiestel and Carlucci. Yim does not teach particle size or incorporating the particles into a substrate. Harada and Carlucci cure this deficiency.

*Finding of Prima Facie Obviousness Rationale and Motivation  
(MPEP §2142-2143)*

It would have been prima facie obvious to modify the particles taught by Yim with chelators, because chelators are known to enhance the biding of metals (Schiestel) and would also be reasonably expected to prevent undesirable particle aggregation. The incorporation of chelators comprising an iminodiacetic acid moiety, such as EDTA, would also have been prima facie obvious, because said chelators are known to be odor control materials, which is a property shared by the carrier materials comprising Yin's invented particles (e.g. silica). The combination

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of two materials known to have the same property would have been *prima facie* obvious, because an ordinary skilled artisan would have a reasonable expectation of at least an additive effect in the shared property. An ordinary skilled artisan would have had a reasonable expectation of successfully incorporating a bifunctional chelators having an iminodiacetic acid moiety into Yin's particles, such as EDTA, because EDTA is a well known odor control material and metal chelators. As noted above, Yim does not teach the zeta potential of the particles. It is the Examiner's position that while Yim is silent with respect to this limitation, the limitation is met. Applicant in claim 2, list several particles which have a positive zeta potential of which silica and magnesium oxide is listed. Yim discloses in column 2, lines 16-20 that silica and magnesium oxide are carriers onto which the transition metal is bonded. Regarding the various zeta-potential values recited in Applicants' dependent claims, Yim's carrier particles comprising the same group of metals would reasonably be expected to exhibit the same or substantially similar zeta potential values, because Yim's particles are made of some of the same positive zeta potential materials recited in Applicants' claim 2 and also comprise some of the same metals recited in Applicants' claims 9 and 56. Therefore, this limitation is met by Yim. Yim does not teach using a bifunctional chelating agent to complex the particle with the transition metal. Schiestel et al. is relied upon to solve this deficiency. Schiestel et al. in lines 13-21 of column 2, gives one of ordinary skill in the art motivation for using a bifunctional chelating agent for complexing a transition metal to a particle (i.e. to prevent irreversible aggregation).

Yim does not teach the particle size or incorporating the particles into a substrate. Harada et al. is relied upon to solve this deficiency. Column 9, lines 25-64 teaches that absorbant particles can be incorporated into woven and non- woven fabrics. With respect to the particle

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size this determination would have been made through routine experimentation to achieve the desired results of the claimed invention. Regarding claim 74 reciting a facemask, it would have been *prima facie* obvious to incorporate Yim's deodorant particles as modified by Schiestel, Harada, and Carlucci in any substrate or article reasonably expected to be exposed to malodorous compounds such as a facemask. One's face is covered by skin containing sweat glands and pores. It is common experience that any human skin surface can sweat and that sweating often results in malodor. Thus, an ordinary skilled artisan would reasonably expect that a facemask would benefit from the incorporation of odor controlling or deodorant particles. Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because the combined teachings of the prior art is fairly suggestive of the claimed invention.

***Allowable Subject Matter***

**Claim 75-82 are allowed.** Claims 75-82 claim a substrate for reducing odor coated with particles coated with alumina modified with a transition metal that have a positive zeta potential, wherein a bifunctional chelating agent complexes the transition metal and contains a dye. The prior art does not teach or suggest substrates coated with particles coated with alumina, wherein the particles are modified with a transition metal containing a bifunctional chelating agent complexing the transition metal and wherein the bifunctional chelating agent also contains a dye.

**Claims 19 and 65 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or suggest (1) a method of reducing odor as described above in the 103 rejection nor (2) a substrate for reducing odor as



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described above in the 103 rejection, wherein the bifunctional chelating agent is a catechol containing an iminodiacetic acid group.

***Conclusion***

**Claims 1-3, 5-12, 14, 16, 22-24, 52-62, 68-74 are rejected. Claims 75-82 are allowed.**

**Claims 19 and 65 are objected for depending from a rejected claim.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner can normally be reached on M-F, 9:00-6:30, with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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